

Appl. No. 09/603,184

Attorney Docket No. 81784.0211

Amdt. Dated January 9, 2006

Customer No.: 26021

Reply to final Office Action of October 20, 2005

REMARKS/ARGUMENTS

Claims 1-9 and 11-13 are pending in the application. By this amendment, claims 1, 3 and 11 are being amended to advance the prosecution of the application. No new matter is involved. Entry of this amendment under the provisions of 37 C.F.R. § 1.116 as placing the application in condition for allowance or alternatively in better form for appeal, and reconsideration and allowance in view thereof, are respectfully requested.

In paragraph 2 on page 2 of the final Office Action, claims 1-9 and 11-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite. With respect to claim 1, the final Office Action suggests that the recitation "changed to" in the third from the last line be replaced by "replaced by". In response, claim 1 is being amended in this manner so as to overcome the rejection thereof as being indefinite. Consequently, claims 2-9 and 11-13 which depend from claim 1 should also now be clear and definite.

In paragraph 5 on page 2 of the final Office Action, claim 3 is said to be indefinite because of its recitation "a noise detection circuit". This is the same noise detection circuit as the one introduced in claim 1. Therefore, claim 3 is being amended to delete the reference to "a noise detection circuit" which is already introduced in claim 1. Claim 3 should now be clear and definite, as should be claims 4-9 which depend from claim 3.

In paragraph 7 which begins on page 2 of the final Office Action, claim 8 is said to be unclear. The question is raised as to how it is possible that a delay time of the first delay circuit is determined based on a sum of an interpolation processing time of the interpolation circuit and a delay time of the second delay circuit, without

Appl. No. 09/603,184

Attorney Docket No. 81784.0211

Amdt. Dated January 9, 2006

Customer No.: 26021

Reply to final Office Action of October 20, 2005

considering the delay time introduced by the claim LPF. Fig. 1 of the specification is said to provide no other alternative. In paragraph 8 on page 3 of the final Office Action, claim 9 which depends from claim 8, is rejected for the same reasons. However, this rejection is respectfully traversed, based on the following explanation.

The LPF may generate a delay time, as pointed out in the final Office Action. However, because the LPF is designed to eliminate relatively high frequency components such as those higher than 38kHz, the generated delay time is very small. In particular, the generated delay time is extremely small compared to the interpolation processing time (smaller than 1/10 of the interpolation processing time), such that the delay time of the LPF is insignificant and can be ignored. In view of this, claims 8 and 9 are submitted to be clear and definite in their present form.

In paragraph 10 which begins on page 3 of the final Office Action, claims 1, 3-9, 11 and 13 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 6,690,805 of Tsuji et al. In paragraph 12 which begins on page 7 of the final Office Action, claims 2 and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Tsuji '805. These rejections are respectfully traversed.

However, in order to clearly distinguish patentably over such reference, claim 1 is being amended to add the feature thereto that "said LPF passes a main signal and eliminate sub-signals and pilot signals", with claim 11 being amended in view thereof. The rejection of claim 11 which previously contained this limitation being added to claim 1 is based on an incorrect understanding of Tsuji.

In the device of Tsuji, a signal is decomposed by means of LPF 13 and HPF 21. The low frequency signal component is interpolated using the polynomial

Appl. No. 09/603,184

Attorney Docket No. 81784.0211

Amdt. Dated January 9, 2006

Customer No.: 26021

Reply to final Office Action of October 20, 2005

interpolation circuit 14. Subsequently, the high frequency signal component is interpolated using the high frequency band interpolation circuit 23. The high frequency band interpolation circuit 23 does not perform polynomial interpolation, but instead, as shown in Fig. 59, selects a segment having a waveform equivalent to the waveform A1-A2 immediately before the noise segment, from among the preceding waveform, and substitutes the selected segment in the noise segment. The high frequency signal component interpolated in this manner is subsequently synthesized with the interpolated low frequency signal component. This synthesis must be performed because the main signal is also included in the high frequency region. In other words, the LPF 13 has a bandpass range that is much lower than that of the LPF of the present invention, and is blocking the main signal. Although Tsuji specifically recites in column 10, lines 48-55 that the LPF extracts the low frequency component as asserted by the Examiner, it is obvious from the overall description of the embodiments that the LPF of Tsuji is blocking frequencies including the main signal.

In contrast, and in accordance with the present invention, the LPF eliminates only the sub-signals and pilot signals. The present invention therefore does not require HPF 21 and high frequency band interpolation circuit 23 employed in Tsuji, and enables the performance of polynomial interpolation directly on the main signal and outputting of the resulting signal. As such, in the present invention, by designing the bandpass range of the LPF such that the LPF passes a main signal and eliminates sub-signals and pilot signals, the circuit structure can be simplified.

Therefore, claim 1 as amended is submitted to clearly distinguish patentably over Tsuji. As amended herein, claim 1 now recites "said LPF passes a main signal and eliminates sub-signals and pilot signals". As discussed above, this feature is neither shown nor suggested by Tsuji.

Appl. No. 09/603,184

Attorney Docket No. 81784.0211

Amdt. Dated January 9, 2006

Customer No.: 26021

Reply to final Office Action of October 20, 2005

Claims 2-9 and 11-13 depend, directly or indirectly, from and contain all of the limitations of claim 1, so that such claims are also submitted to clearly distinguish patentably over the prior art.

In conclusion, claims 1-9 and 11-13 are submitted to clearly distinguish patentably over the prior art for the reasons discussed above. Therefore, reconsideration and allowance are respectfully requested.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-1314.

Respectfully submitted,

HOGAN & HARTSON L.L.P.

Date: January 9, 2006

By:


John P. Scherlacher

Registration No. 23,009

Attorney for Applicant(s)

500 South Grand Avenue, Suite 1900
Los Angeles, California 90071
Phone: 213-337-6700
Fax: 213-337-6701